ralist to the American Transit of Venus Expedition in 1874–75. The results are of much interest, as the climatic features of the island are peculiar, while there are no land birds or mammals, strictly speaking, indigenous to it, and but a single shore-bird (*Chionis minor*), though the island is about ninety miles long and fifty broad, with snow-covered mountains, the highest of which (Mount Ross) rises to an elevation of about 5000 feet. The birds observed were pelagic forms, such as gulls, albatross, penguins, etc. The species have been determined by Dr. Coues, whose synonymical and other notes give additional value to the essay.

THE ZOÖLOGICAL RECORD.[1] — Though it is nearly time for the appearance of the volume for 1874, it is perhaps not entirely too late for us to call the attention of our readers to the value of these yearly indexes to the literature of systematic zoölogy. They deserve an extended circulation in this country, where access to zoölogical works is limited, and students away from large libraries are obliged to use such a record. Possessing such a manual of recent zoölogical literature, and ascertaining what has been published in his special department, the isolated student can borrow from central libraries works of which he otherwise would be totally ignorant.

We notice that the last four volumes are much thinner than the early ones. Is this a sign of the zoölogical millenium when all the new species and genera shall have been described, and students will be forced to study the anatomy, physiology, and development of animals?

SCUDDER'S FOSSIL BUTTERFLIES.[2] — This beautifully printed and illustrated memoir is the result of a critical and extensive examination of the specimens of fossil butterflies existing in European museums, none having yet occurred in this country. After describing the fossils with minuteness, and elaborately comparing them with related forms now living, the author discusses the comparative age of fossil butterflies, the probable food-plants of tertiary caterpillars, and the present distribution of butterflies most nearly allied to the fossil species, besides noticing such insects as have been erroneously referred in recent times to butterflies.

It appears that nine well-authenticated species of butterflies are now known, all from the European Eocene and Miocene tertiary formations, and that they represent all the families of butterflies except the *Rurales*, represented by the *Lycænæ*. Of the allies of the nine fossils forms, four now live in the East Indies, three in America, on the confines of the tropical and north temperate zones, one in the north temperate zone of Europe, Asia, and America, and one on the shores of the Mediterranean.

[1] *The Zoölogical Record* for 1872. Edited by ALFRED NEWTON. 8vo, pp. 495. The same for 1873. Edited by E. C. RYE. London: John Van Voorst. 1875. 8vo. pp. 543.

[2] *Fossil Butterflies.* By SAMUEL H. SCUDDER. Memoirs of the American Association for the Advancement of Science. I. Salem, Mass. 1875. 4to, with 3 steel plates; pp. 99. $1.00. For sale by the Naturalist's Agency, Salem, Mass.

Three out of the four species whose living allies occur in the East Indies come from the older deposits of Aix, and only one of the two remaining Aix species shows special affinities to American types. "We thus find here," the author remarks, "as among other insects and among the plants, a growing likeness to American types as we pass upward through the European tertiaries."

This handsome memoir appears in print through the generosity of Mrs. Elizabeth Thompson, of New York city, who generously gave the sum of one thousand dollars for the promotion and publication of original investigations by members of the association. The results in every way prove the wisdom of the donation, and we express the hope that similar benefactions may follow from other sources.

SACHS'S HISTORY OF BOTANY.[1] — Under the patronage of the King of Bavaria, the Royal Academy of Sciences is publishing a History of Modern Science in Germany. The treatment of the individual sciences has been entrusted, by a special commission, to men eminent in their respective departments. This volume is one of the earliest of the series. Professor Sachs, of Würzburg, well known as a high authority in vegetable physiology, and more widely as the author of A Text-Book of Botany, was selected to write the history of botany. The history is given in three books. The first treats of morphology and systematic botany, and covers the period from Otto Brunfels (1530) and Fuchs (1542), down to 1860. The most interesting chapters are those devoted to morphology as influenced (1) by the theory of metamorphosis and the spiral distribution of leaves (1790–1850), and (2) by a fuller knowledge of the cell and the lower grades of plants, and (3) by the theory of development (1840–1860). Professor Sachs looks upon the work done during the twenty years just mentioned, as having freed morphology and systematic botany from their old prejudices; sight has become clearer, the methods of investigation safer, and the manner of putting questions sharper.

The second book sketches the progress of vegetable anatomy from Malpighi and Grew (1671–1682) down to the time of Nägeli. The author justly regards Von Mohl and Nägeli as having together placed this division of botany on a secure foundation. The molecular theory of the latter is considered the basis of modern vegetable physiology.

To this subject the third book is devoted. The conflicting views which have been held respecting reproduction, nutrition, and the dynamics of plants are fully presented and with great fairness. It is hardly possible to detect any partiality in this remarkable section. It remains to be noticed that this history is not confined to botany in Germany; Germans may, however, well be proud of the large and honorable share which their countrymen are here shown to have taken in the advancement of the

[1] *Geschichte der Botanik vom* 16 *Jahrhundert bis* 1860. Von DR. JULIUS SACHS. München. 1875. (A History of Botany from the 16th Century to 1860. By DR. JULIUS SACHS. Munich. 1875.)